

§ 30.71

10 CFR Ch. I (1-1-11 Edition)

[See footnotes at end of this table]

Element (atomic number)	Isotope	Col. I	Col. II
		Gas concentration μCi/ml ¹	Liquid and solid concentration μCi/ ml ²
Zinc (30)	Y 92 .....	.....	6×10 ⁻⁴
	Y 93 .....	.....	3×10 ⁻⁴
	Zn 65 .....	.....	1×10 ⁻³
	Zn 69m .....	.....	7×10 ⁻⁴
	Zn 69 .....	.....	2×10 ⁻²
Zirconium (40)	Zr 95 .....	.....	6×10 ⁻⁴
	Zr 97 .....	.....	2×10 ⁻⁴
Beta and/or gamma emitting byproduct material not listed above with half-life less than 3 years.	.....	1×10 ⁻¹⁰	1×10 ⁻⁶

Footnotes to Schedule A:

¹Values are given only for those materials normally used as gases.

²μCi/gm for solids.

NOTE 1: Many radioisotopes disintegrate into isotopes which are also radioactive. In expressing the concentrations in Schedule A, the activity stated is that of the parent isotope and takes into account the daughters.

NOTE 2: For purposes of § 30.14 where there is involved a combination of isotopes, the limit for the combination should be derived as follows:

Determine for each isotope in the product the ratio between the concentration present in the product and the exempt concentration established in Schedule A for the specific isotope when not in combination. The sum of such ratios may not exceed "1" (i.e., unity).

Example:

$$\frac{\text{Concentration of Isotope A in Product}}{\text{Exempt concentration of Isotope A}} + \frac{\text{Concentration of Isotope B in Product}}{\text{Exempt concentration of Isotope B}} < 1 =$$

[30 FR 8185, June 26, 1965, as amended at 35 FR 3982, Mar. 3, 1970; 38 FR 29314, Oct. 24, 1973;
59 FR 5520, Feb. 7, 1994]

§ 30.71 Schedule B.

Byproduct material	Microcuries	Byproduct material	Microcuries
Antimony 122 (Sb 122)	100	Copper 64 (Cu 64)	100
Antimony 124 (Sb 124)	10	Dysprosium 165 (Dy 165)	10
Antimony 125 (Sb 125)	10	Dysprosium 166 (Dy 166)	100
Arsenic 73 (As 73)	100	Erbium 169 (Er 169)	100
Arsenic 74 (As 74)	10	Erbium 171 (Er 171)	100
Arsenic 76 (As 76)	10	Europium 152 9.2 h (Eu 152 9.2 h)	100
Arsenic 77 (As 77)	100	Europium 152 13 yr (Eu 152 13 yr)	1
Barium 131 (Ba 131)	10	Europium 154 (Eu 154)	1
Barium 133 (Ba 133)	10	Europium 155 (Eu 155)	10
Barium 140 (Ba 140)	10	Fluorine 18 (F 18)	1,000
Bismuth 210 (Bi 210)	1	Gadolinium 153 (Gd 153)	10
Bromine 82 (Br 82)	10	Gadolinium 159 (Gd 159)	100
Cadmium 109 (Cd 109)	10	Gallium 67 (Ga 67)	100
Cadmium 115m (Cd 115m)	10	Gallium 72 (Ga 72)	10
Cadmium 115 (Cd 115)	100	Germanium 68 (Ge 68)	10
Calcium 45 (Ca 45)	10	Germanium 71 (Ge 71)	100
Calcium 47 (Ca 47)	10	Gold 195 (Au 195)	10
Carbon 14 (C 14)	100	Gold 198 (Au 198)	100
Cerium 141 (Ce 141)	100	Gold 199 (Au 199)	100
Cerium 143 (Ce 143)	100	Hafnium 181 (Hf 181)	10
Cerium 144 (Ce 144)	1	Holmium 166 (Ho 166)	100
Cesium 129 (Cs 129)	100	Hydrogen 3 (H 3)	1,000
Cesium 131 (Cs 131)	1,000	Indium 111 (In 111)	100
Cesium 134m (Cs 134m)	100	Indium 113m (In 113m)	100
Cesium 134 (Cs 134)	1	Indium 114m (In 114m)	10
Cesium 135 (Cs 135)	10	Indium 115m (In 115m)	100
Cesium 136 (Cs 136)	10	Indium 115 (In 115)	10
Cesium 137 (Cs 137)	10	Iodine 123 (I 123)	100
Chlorine 36 (Cl 36)	10	Iodine 125 (I 125)	1
Chlorine 38 (Cl 38)	10	Iodine 126 (I 126)	1
Chromium 51 (Cr 51)	1,000	Iodine 129 (I 129)	0.1
Cobalt 57 (Co 57)	100	Iodine 131 (I 131)	1
Cobalt 58m (Co 58m)	10	Iodine 132 (I 132)	10
Cobalt 58 (Co 58)	10	Iodine 133 (I 133)	1
Cobalt 60 (Co 60)	1	Iodine 134 (I 134)	10
		Iridium 192 (Ir 192)	10

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Byproduct material	Microcuries	Byproduct material	Microcuries
Iridium 194 (Ir 194)	100	Technetium 97 (Tc 97)	100
Iron 52 (Fe 52)	10	Technetium 99m (Tc 99m)	100
Iron 55 (Fe 55)	100	Technetium 99 (Tc 99)	10
Iron 59 (Fe 59)	10	Tellurium 125m (Te 125m)	10
Krypton 85 (Kr 85)	100	Tellurium 127m (Te 127m)	10
Krypton 87 (Kr 87)	10	Tellurium 127 (Te 127)	100
Lanthanum 140 (La 140)	10	Tellurium 129m (Te 129m)	10
Lutetium 177 (Lu 177)	100	Tellurium 129 (Te 129)	100
Manganese 52 (Mn 52)	10	Tellurium 131m (Te 131m)	10
Manganese 54 (Mn 54)	10	Tellurium 132 (Te 132)	10
Manganese 56 (Mn 56)	10	Terbium 160 (Tb 160)	10
Mercury 197m (Hg 197m)	100	Thallium 200 (Tl 200)	100
Mercury 197 (Hg 197)	100	Thallium 201 (Tl 201)	100
Mercury 203 (Hg 203)	10	Thallium 202 (Tl 202)	100
Molybdenum 99 (Mo 99)	100	Thallium 204 (Tl 204)	10
Neodymium 147 (Nd 147)	100	Thulium 170 (Tm 170)	10
Neodymium 149 (Nd 149)	100	Thulium 171 (Tm 171)	10
Nickel 59 (Ni 59)	100	Tin 113 (Sn 113)	10
Nickel 63 (Ni 63)	10	Tin 125 (Sn 125)	10
Nickel 65 (Ni 65)	100	Tungsten 181 (W 181)	10
Niobium 93m (Nb 93m)	10	Tungsten 185 (W 185)	10
Niobium 95 (Nb 95)	10	Tungsten 187 (W 187)	100
Niobium 97 (Nb 97)	10	Vanadium 48 (V 48)	10
Osmium 185 (Os 185)	10	Xenon 131m (Xe 131m)	1,000
Osmium 191m (Os 191m)	100	Xenon 133 (Xe 133)	100
Osmium 191 (Os 191)	100	Xenon 135 (Xe 135)	100
Osmium 193 (Os 193)	100	Ytterbium 175 (Yb 175)	100
Palladium 103 (Pd 103)	100	Yttrium 87 (Y 87)	10
Palladium 109 (Pd 109)	100	Yttrium 88 (Y 88)	10
Phosphorus 32 (P 32)	10	Yttrium 90 (Y 90)	10
Platinum 191 (Pt 191)	100	Yttrium 91 (Y 91)	10
Platinum 193m (Pt 193m)	100	Yttrium 92 (Y 92)	100
Platinum 193 (Pt 193)	100	Yttrium 93 (Y 93)	100
Platinum 197m (Pt 197m)	100	Zinc 65 (Zn 65)	10
Platinum 197 (Pt 197)	100	Zinc 69m (Zn 69m)	100
Polonium 210 (Po 210)	0.1	Zinc 69 (Zn 69)	1,000
Potassium 42 (K 42)	10	Zirconium 93 (Zr 93)	10
Potassium 43 (K 43)	10	Zirconium 95 (Zr 95)	10
Praseodymium 142 (Pr 142)	100	Zirconium 97 (Zr 97)	10
Praseodymium 143 (Pr 143)	100	Any byproduct material not listed above other than alpha emitting byproduct material	0.1
Promethium 147 (Pm 147)	10		
Promethium 149 (Pm 149)	10		
Rhenium 186 (Re 186)	100		
Rhenium 188 (Re 188)	100	[35 FR 6427, Apr. 22, 1970, as amended at 36 FR 16898, Aug. 26, 1971; 59 FR 5519, Feb. 7, 1994; 72 FR 55926, Oct. 1, 2007]	
Rhodium 103m (Rh 103m)	100		
Rhodium 105 (Rh 105)	10		
Rubidium 81 (Rb 81)	10		
Rubidium 86 (Rb 86)	10		
Rubidium 87 (Rb 87)	10		
Ruthenium 97 (Ru 97)	10		
Ruthenium 103 (Ru 103)	10		
Ruthenium 105 (Ru 105)	1		
Ruthenium 106 (Ru 106)	1		
Samarium 151 (Sm 151)	10		
Samarium 153 (Sm 153)	10		
Scandium 46 (Sc 46)	100		
Scandium 47 (Sc 47)	100		
Scandium 48 (Sc 48)	100		
Selenium 75 (Se 75)	10		
Silicon 31 (Si 31)	100		
Silver 105 (Ag 105)	10		
Silver 110m (Ag 110m)	1		
Silver 111 (Ag 111)	100		
Sodium 22 (Na 22)	100		
Sodium 24 (Na 24)	10		
Strontium 85 (Sr 85)	10		
Strontium 89 (Sr 89)	10		
Strontium 90 (Sr 90)	10		
Strontium 91 (Sr 91)	0.1		
Strontium 92 (Sr 92)	1		
Sulphur 35 (S 35)	10		
Tantalum 182 (Ta 182)	100		
Technetium 96 (Tc 96)	10		
Technetium 97m (Tc 97m)	100		